DOI 10.1007/s10469-018-9488-3
Algebra and Logic, Vol. 57, No. 2, May, 2018
(Russian Original Vol. 57, No. 2, March-April, 2018)

COMMUNICATIONS

JUMP INVERSIONS OF ALGEBRAIC STRUCTURES AND THE Σ-DEFINABILITY

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UDC 510.5

Presented by Associate Editor S. S. Goncharov

1. PRELIMINARIES

The notion of the jump of a structure has received much attention in computable structure theory over the last decade. The jump of a structure $\mathcal{A}$ is defined by adding to $\mathcal{A}$ a complete Σ_1 relation. This term was introduced independently by various researchers [1-7], as there are various ways of understanding what a complete Σ_1 relation is: Montalbán used relatively intrinsic c.e. subsets of $\mathbb{N} \times \mathcal{A}^{<\omega}$; Soskov employed the forcing relation for Π_1 formulas over the Moschovakis extension of $\mathcal{A}$. In Russia it is common to deal with universal Σ-definable relations on the hereditarily finite extension of $\mathcal{A}$—we adhere to just this approach here. (The reader is referred to [8] for the history of the different definitions explained in more detail.) The notion of jump, it turned out, is important because its use brings more clarity to different known constructions in computable structure theory.

[*]Supported by the Russian Ministry of Education and Science, project No. 1.451.2016/1.4.
[**]Supported by the Packard Fellowship and by the NSF grant DMS-0901169.
[***]Supported by RFBR, project No. 18-01-00624-a.
[****]Supported by the Russian Ministry of Education and Science, project No. 1.1515.2017/4.6.

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